navico
Leader in Marine Electronics

Installation Manual

Navico WM-2
Sirius Satellite Weather & Radio Module

English

www.northstarnav.com.
www.simrad-yachting.com

Brands by Navico - Leader in Marine Electronics

Please place the ESN sticker in the box below

This ESN number is important. You will need it to activate SIRIUS services see page 20

SIRIUS SATELLITE RADIO

Contact SIRIUS at 1-800-869-5480

Preface

FCC Statement

This equipment has been tested and complies with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a normal installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. This device must accept any interference received, including interference that may cause undesired operation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an output on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced technician for help.
- A shielded cable must be used when connecting a peripheral to the serial ports.

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

Warranty

The warranty card is supplied as a separate document and includes worldwide sales and service information.

In case of any queries, refer to the brand web site of your display or system.

www.simrad-yachting.com

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Disclaimer

As Navico is continuously improving this product, we retain the right to make changes to the product at any time which may not be reflected in this version of the manual. Please contact your nearest distributor if you require any further assistance.

It is the owner's sole responsibility to install and use the instrument and transducers in a manner that will not cause accidents, personal injury or property damage. The user of this product is solely responsible for observing safe boating practices.

NAVICO HOLDING AS. AND ITS SUBSIDIARIES, BRANCHES AND AFFILIATES DISCLAIM ALL LIABILITY FOR ANY USE OF THIS PRODUCT IN A WAY THAT MAY CAUSE ACCIDENTS, DAMAGE OR THAT MAY VIOLATE THE LAW.

Governing Language: This statement, any instruction manuals, user guides and other information relating to the product (Documentation) may be translated to, or has been translated from, another language (Translation). In the event of any conflict between any Translation of the Documentation, the English language version of the Documentation will be the official version of the Documentation.

This manual represents the product as at the time of printing. Navico Holding AS. and its subsidiaries, branches and affiliates reserve the right to make changes to specifications without notice.

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Introduction

The Navico Satellite Weather Module (000-10036-001) is compatible with the following Navico displays:

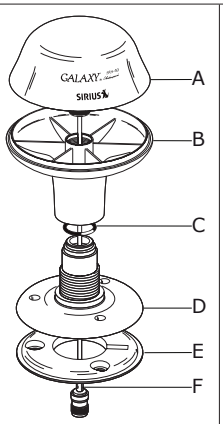
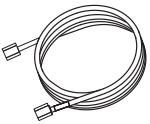
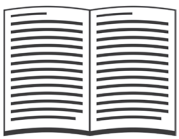
SIMRAD	NSE
SIMRAD	GB40

Functionality cross reference

Display system	Weather	Satellite radio
Simrad NSE	Y	Y
GB40	Y*	N
*Some feature functionality could be limited depend on region.		

Parts List

Part Number		Description
151-10006-01		Navico WM-2 weather module
000-0127-54		Power cable
000-10032-001		Audio Interface cable 3m (9 ft)
000-0127-51		Ethernet cable 2m (6 ft)
		Mounting screws (4) for WM-2 module

		SRA-40 antenna with surface / pole mount A Antenna B Pole / Flush mount flange C 'O' Ring D Surface mount base E Gasket F Cable
		7.62 m (25 ft) antenna cable
		Mounting screws (3) for SIRIUS antenna
		Documentation Installation manual, warranty card

Required tools

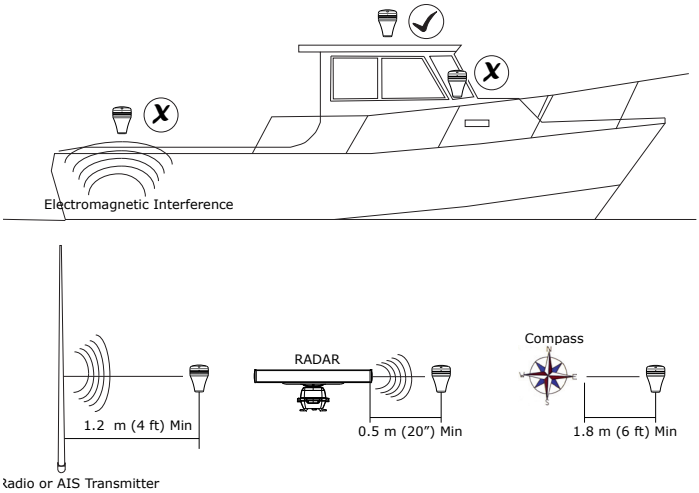
Screwdriver. Marking pencil, drill and drill bits 14 mm, 3 mm (9/16", 7/64"), or other tools appropriate to your specific application may also be needed.

Required materials

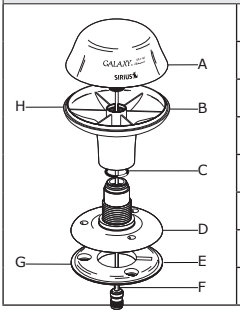
Silicone sealer when flush mounting

Installing the antenna

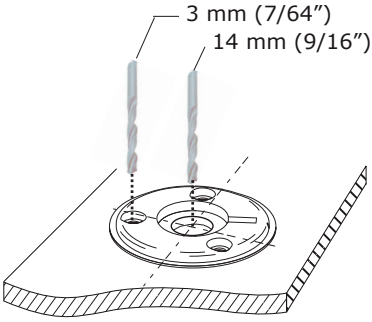
Select the mounting location



Do not cut or alter the antenna cable. Do not remove its connector.

Antenna assembly		
	A	SIRIUS antenna
	B	Thread adapter
	C	O-Ring
	D	Base
	E	Knife slit for passage of cable
	F	6” (15cm) cable
	G	Mounting gasket
	H	Mounting flange

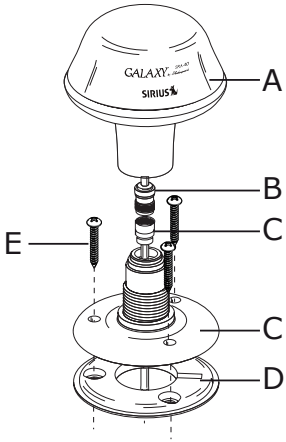
Pedestal mount



1 Use mounting gasket as a template for hole locations.

2 Drill pilot holes for mounting screws. Use 3mm (7/64th) drill bit.

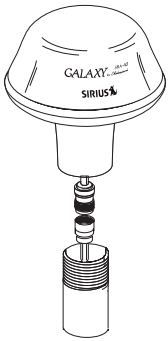
3 Drill 14 mm (9/16th hole for antenna cable.



1 Secure base (C) and gasket (D) to the surface using 3 screws (E).

2 Connect Antenna extension cable (C) to the antennas short cable (B).

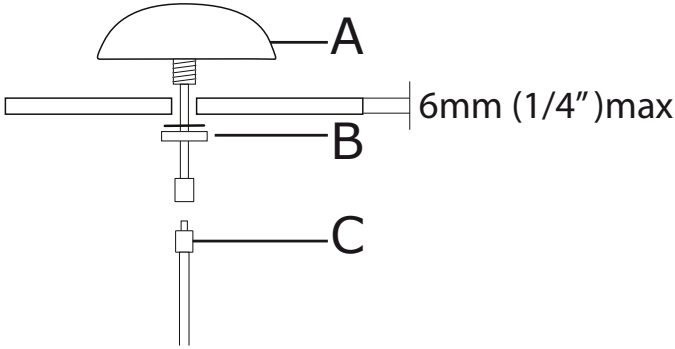
3 Screw the Antenna and mounting flange (A) to the base.



The antenna can also be mounted to a standard 25 mm (1”) marine mounting pole.

Surface mount

Mounting on surfaces up to 6 mm (1/4”) in thickness.

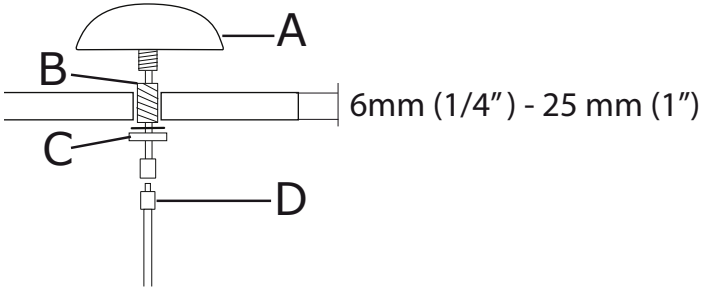


A Antenna

B Lock washer and nut

C Antenna extension cable

Mounting on surfaces 6 mm (1/4”) to 25 mm (1”) in thickness.



A Antenna

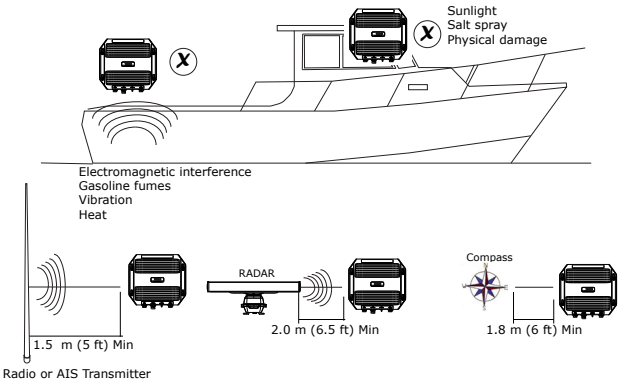
B Extension shaft

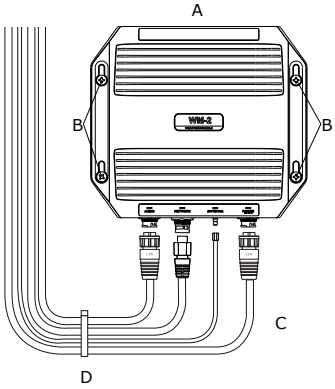
C Lock washer and nut

D Antenna extension cable

Installing the weather module

Mounting Location





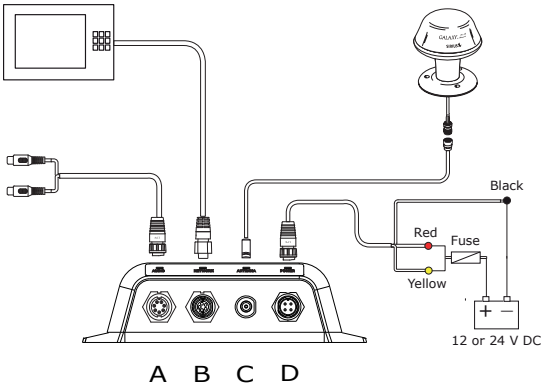
Key	Description
A	Navico WM-2 Weather module. Preferably mount on to a vertical surface with connectors facing down.
B	Secure the module to the surface using the screws provided or other suitable fastener
C	When mounted on a vertical surface. Create drip loops to prevent moisture entering the connectors. Be care full not to place strain in the connectors
D	Secure cables

Wiring the WM-2 Weather Module

Wiring guidelines

Don't do this	Do this
Don't make sharp bends in the cables.	Do make drip and service loops
Don't run cables in a way that allows water to flow down into the connectors.	Do tie-wrap all cables to keep them secure
Don't route the data cables in areas adjacent to radar, transmitter, or large current carrying cables.	
Don't cut or modify the antenna cable	

Connectors overview



Key	Description
A	Audio out: line level audio out. Connect to onboard amplifier and speakers using the provided cable.
B	Network. Connect to the display system's Ethernet network.
C	Sirius satellite antenna connector.
D	Power: Connect to 12 or 24 v DC. The WM-2 is protected by an internal auto resetting fuse. Connect to a breaker or fuse to protect the cable

Connect Power

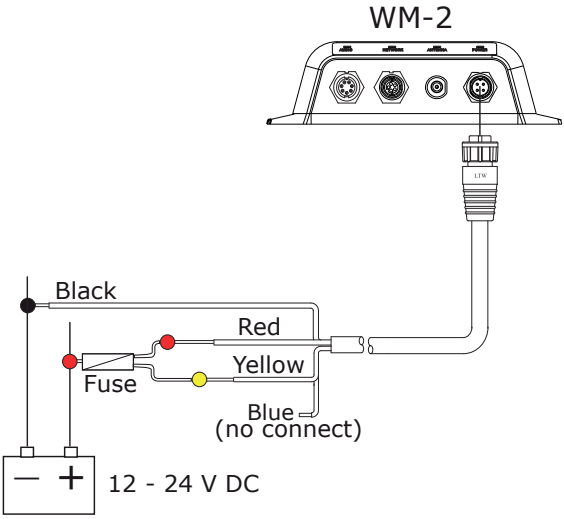
Before starting the installation, be sure to turn electrical power off. If power is left on or turned on during the installation, fire, electrical shock, or other serious injury may occur. Be sure that the voltage of the power supply is compatible with the WM-2 weather module

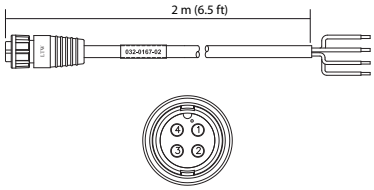
The WM-2 has a voltage rating of 12 V DC or 24 V DC. (9 V DC - 32 V DC max range).

The red wire should always be connected to (+) DC V using a fuse or thermal breaker (5 Amp) to protect the cable. The WM-2 is protected by an internal auto resetting fuse.

The yellow Power control wire has to be either:

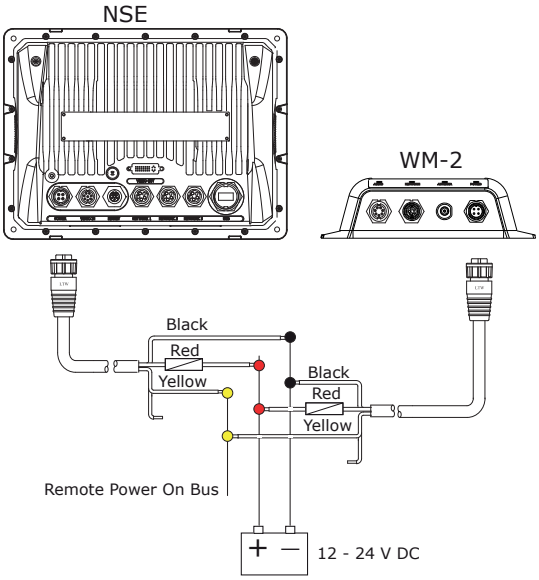
- Common with the red wire (after fuse or breaker).
- Connected in common to the power control wire of another
- display or device.



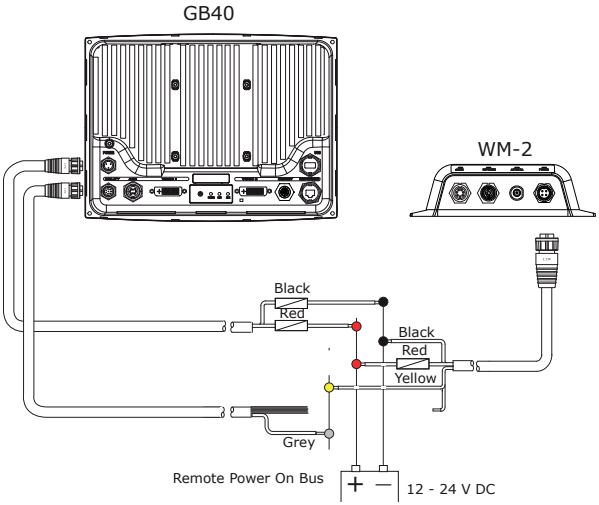
Power cable	Pin	Color	Function
	1	Black	Battery (-)
	2	Blue	N/C
	3	Yellow	Power Ctrl
	4	Red	Battery (+) 12-24 V DC

The WM-2 weather module can be configured to turn on when the display is turned on.

For NSE connect the Power Control wires.

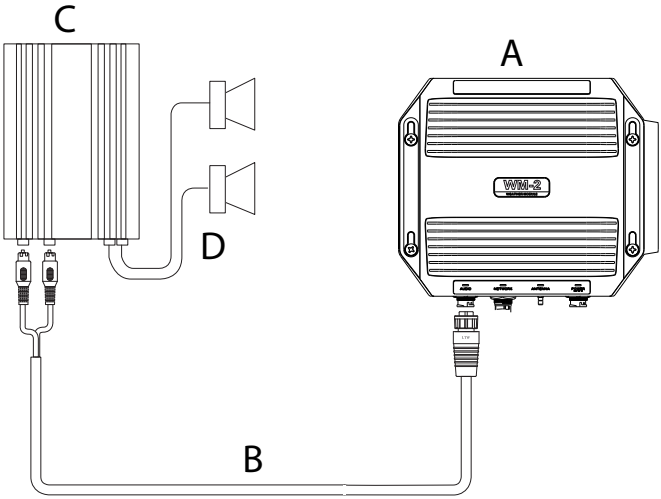


Simrad GB40 connect the Grey wire on the 12 pin utility cable to the yellow wire on the WM-2 power cable



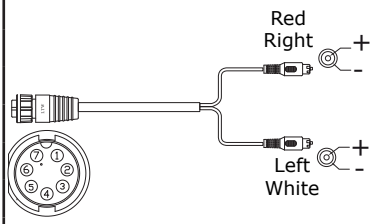
Audio connection

SIRIUS satellite radio can be accessed and controlled from certain Navico displays. The supplied audio cable is connected to an on board amplifier.



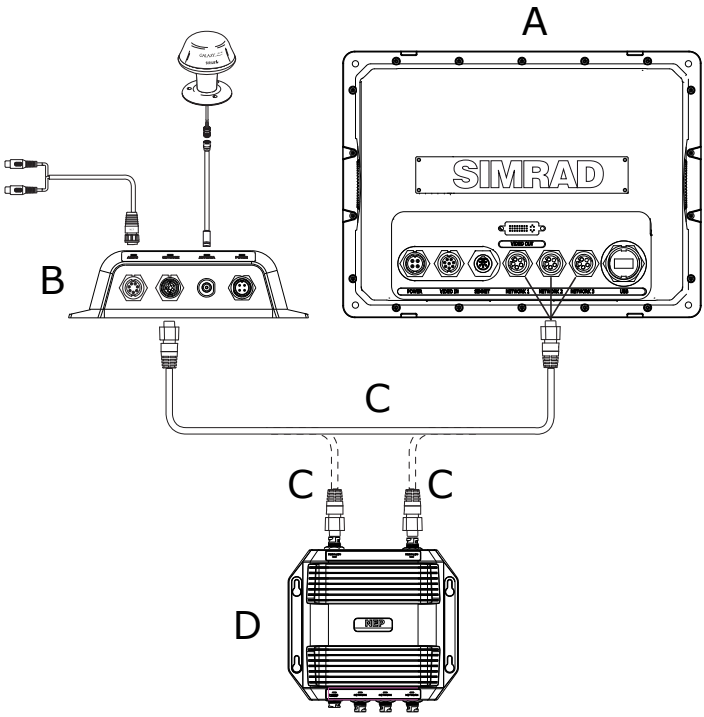
Key	Description
A	WM-2 Weather module
B	Audio out cable (supplied) 7 pin to 2 x RCA male connectors.
C	On board audio system with analog input..
D	Audio system speakers.

Audio cable

Audio cable	Pin	Function
	1	-
	2	-
	3	Right channel (-)
	4	Right channel (+)
	5	Left channel (+)
	6	Left channel (-)
	7	Shield

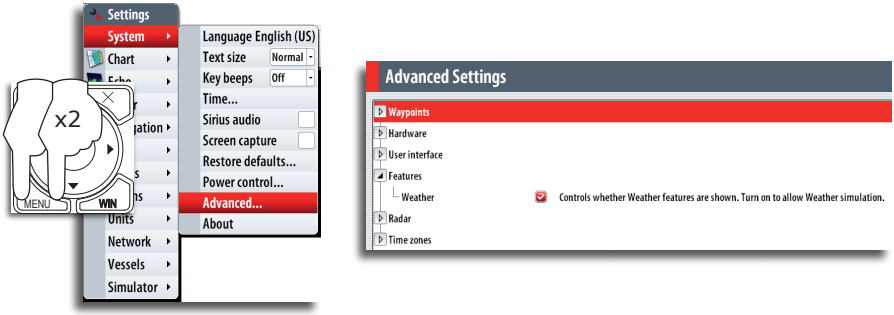
Connecting to your display

Simrad NSE8, NSE12



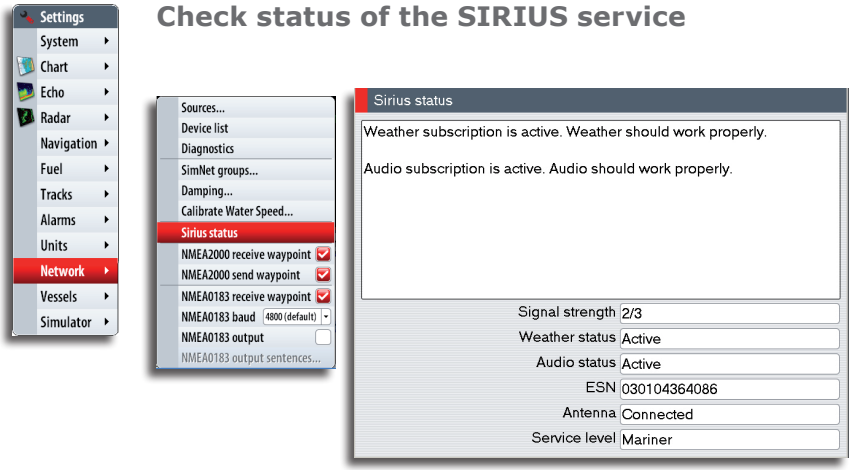
Key	Description
A	Simrad NSE8 or NSE12
B	Navico WM-2
C	Ethernet cables 5 pin yellow: Connect directly to one of the three Ethernet ports or to NEP —see below.
D	NEP (Network expansion port) 5 port Ethernet switch alternative for larger or multi-display systems.

Enable weather on NSE display



Enable audio if subscribed to service

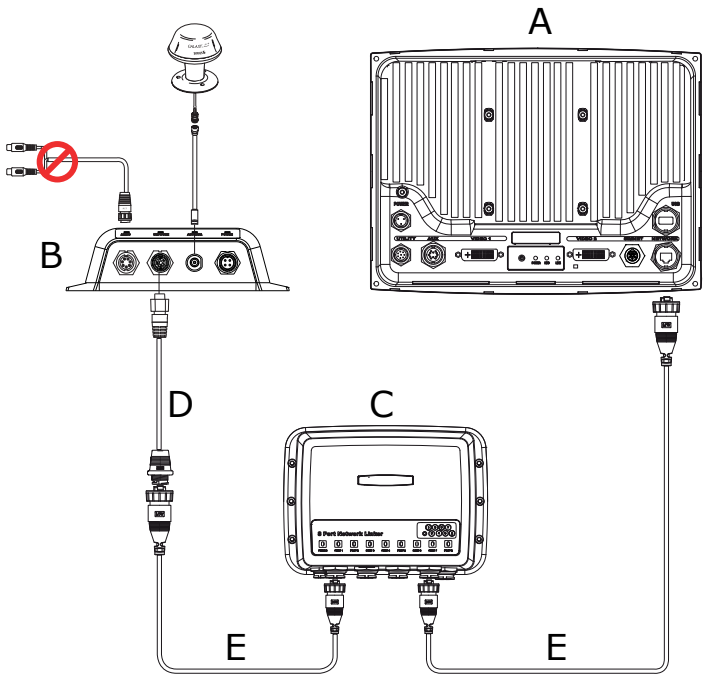
Check status of the SIRIUS service



Activate your account see SIRIUS activation page 20.

SIMRAD
Simrad GB40

In order for GB40 to function properly, a software upgrade is needed, see your dealer for more information.



Key	Description
A	Simrad GB40 NavComputer
B	Navico WM-2 Weather module
C	8 Port Ethernet Linker
D	Ethernet Adapter cable 5 pin yellow - RJ45
E	Ethernet cables RJ45

GB40 does not support Sirius Audio. Do not connect audio cable.

After activation (see SIRIUS activation page 20) display weather by selecting PAGES > WEATHER then select the desired overlay function from the WEATHER OVERLAYS menu.

SIRIUS activation

To use the WM-2 weather module. You must have a subscription to the SIRIUS weather / radio service. Individual weather and audio subscriptions are available. You can also purchase a subscription that includes both weather and audio.

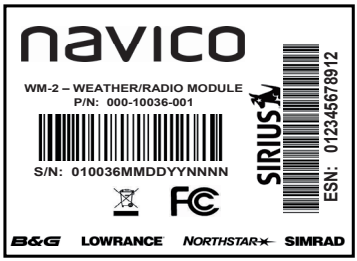
For more information visit www.sirius.com/marineweather

Simrad GB40 can only display weather information

Before calling SIRIUS

Make sure you verify signal strength before calling (see page 19 for further information). In addition, make sure you have the following information:

- The ID/ESN number from your WM-2 weather module. This can be found on the module box, in the front cover of this manual and on the packaging of the product. Keep in a safe place



ESN Number

- Billing information to arrange payment of the subscription . A major credit card is required, with the card holders billing details (US Billing address only)
- Make sure your display unit and WM-2 module are turned on

To activate a SIRIUS subscription

The SIRIUS weather service can only be activated by contacting SIRIUS by phone.

Contact SIRIUS by calling 1-800-869-5480

Spare parts

Part No.	Description
151-100006-01	WM-2 module box
000-00129-001	Power cable
000-10032-001	Audio cable

Ethernet cables NSE:

Part No.	Description
000-0127-55	Adapter cable: Ethernet Yellow to RJ45 adaptor 0.3m (1 ft)
000-0127-56	Adapter cable: Ethernet Yellow male to RJ45 female 2 m (6.5 ft)
000-0127-51	Ethernet cable yellow 5 Pin 2 m (6.5 ft)
000-0127-29	Ethernet cable yellow 5 Pin 4.5 m (15 ft)
000-0127-30	Ethernet cable yellow 5 Pin 7.7 m (25 ft)
000-0127-37	Ethernet cable yellow 5 Pin 15.2 m (50 ft)

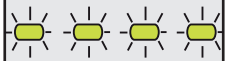
Ethernet cables for GB40 / 8000i:

Part No.	Description
AA010080	2 m (6.6 ft) Ethernet cable
AA010081	5 m(16.5 ft) Ethernet cable
AA010082	10 m (33 ft) Ethernet cable
AA010083	Ethernet Joiner - Female Connections for cable extension
AA010084	Ethernet Crossover - Female Connections
AA010085	Ethernet RJ45 Field Termination Kit

Ethernet cables for 6100i:

Part No.	Description
WA578-A	5 m (16.5 ft)
WA579-A	10 m (33 ft)
WA580-A	20 m (65.5 ft)

LED Information

LED State	Audio	Network	Antenna	Power
Solid on	**Normal operation**	**Normal operation** (Network link OK and communication with display OK)	**Normal operation**	**Normal operation**
Slow blink (long on, short off)	N/A	**Ethernet network link OK** **(No communication with display)** Check cabling.	N/A	N/A
Off	**No reception** **Channel set to "0"** **Audio muted** Check that you are in SIRIUS's coverage area.	**No network link** Check cabling Check the Ethernet switch	**Antenna unplugged** **No reception** Check antenna connections Check for overhead obstructions, radar interference, and that you are in SIRIUS's coverage area.	**No power to module** **Module has failed (if power is applied)** Check breaker or fuse Check cabling Contact your dealer for servicing
 **Fast blink**	**SIRIUS module failure** Contact your dealer for servicing	**Network port failure** Contact your dealer for servicing	**Antenna shorted** Check the antenna is properly installed. Replace the cable	NA

Symptom	Suggestion
Allows overlays but no data.	Attempt to display weather data overlay on your unit. If the unit can 'see' the module (allows overlays) but does not yet display data, wait 5 minutes and check Precipitation overlay (updated every 5 minutes). Module not seen on the network. Check Connections Check Signal strength on Weather Options screen. Observe if strength fluctuates, particularly if clouds are overhead. The SIRIUS Marine Weather subscription may not be current. Check Weather Options: ensure that your ESN is specific to the module you have installed, and that the subscription is valid. Note: if you have returned the module for repair, it will have a new SIRIUS ESN. You may need to call SIRIUS to update your subscription with this number.

Module Data Retention

The module's can store the most recent data in volatile memory.

This cached data is retained for up to 30 minutes when power is removed from the module, such as refueling.

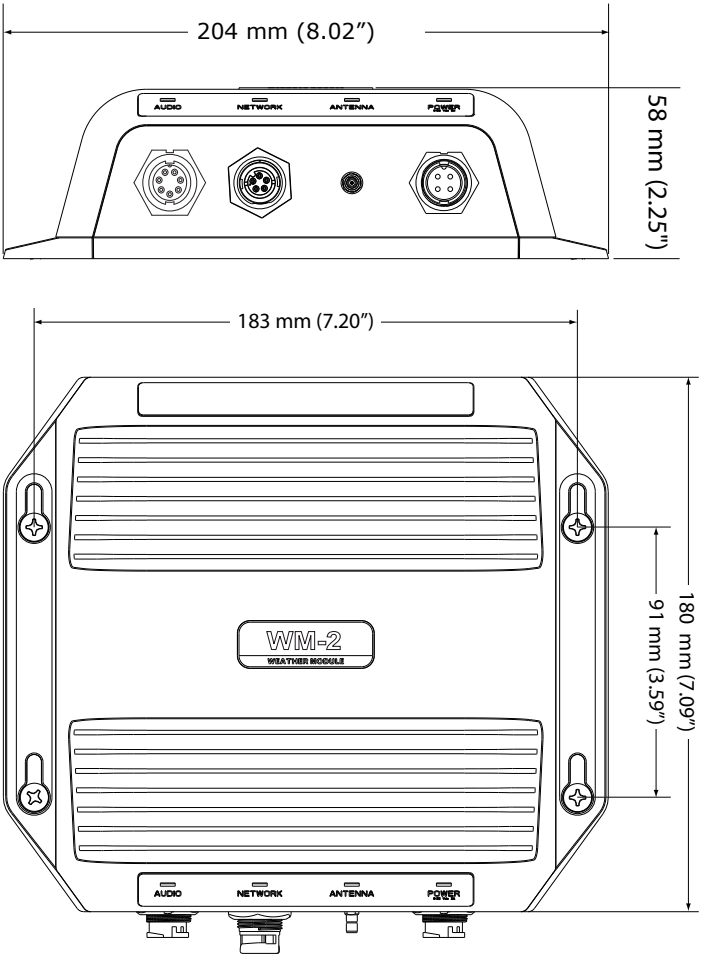
If power to the module is restored within that time a unit can access this data and display it immediately rather than wait for a full transmission cycle to occur.

The volatile memory utilizes an internal capacitor which must be charged prior to removing power to achieve the maximum duration. Charge time is usually about 10 minutes.

Specifications

Environmental	
Thermal	Non-operating: -35°C to + 85° C
	Operating: -15°C to 55°C (5°F to 131°F)
Humidity	Non-operating: 66°C, 95%, humidity, 18 hours
EMI/EMC	FCC Part 15 Class B sub-part J
Water ingress	EN 60529: 1992 (IEC 529 1989): IPX6
Shock & Vibration	IEC 60945 Rev 4 (2002), paragraph 8.7
Mechanical	
Dimensions	Refer to drawing on next page.
Weight	0.9 kg (2.0 lbs)
Power	
Input voltage	12 or 24 V DC (+9 to 32 V DC)
Protection	Internal self setting; reverse polarity protected. Continuous over voltage protection 36 V DC, 5 minutes @25° C
Power consumption	4 W (max)
Power on Power off	Less than 24 Seconds Less than 5 seconds

Dimensions


204 mm (8.02”)
58 mm (2.25”)
AUDIO
NETWORK
ANTENNA
183 mm (7.20”)
180 mm (7.09”)
91 mm (3.59”)
WM-2
WEATHER MODULE

WM-2 Weather Module, Installation Manual, English, Doc.no. 988-0158-16, Rev.B

navico

Leader in Marine Electronics